AMENDMENTS

In the Specification

The following is a copy of Applicants' specification that identifies language being added with underlining ("___") and language being deleted with strikethrough ("~~___~~"), as is applicable:

Please amend the paragraph starting on page 2, line 7 as follows:

In a broad sense, the several embodiments presented herein utilize a process in which contrast data is generated as a function of reference data and acquired sample data. The contrast data has contrast features, which represent deviations between the sample data and the reference data. The contrast data is used to determine an acceptability level of ~~the~~ a sample product.

Please amend the paragraph starting on page 6, line 1 as follows:

The conveyer encoder 230 is operatively coupled to the four client computers 205, 210, 215, 220. The client computers 205, 210, 215, 220 are triggered by the conveyor encoder 230 as the sample moves within imaging range of the eight cameras 110, 120, 130, 140, 150, 160, 170, 180. The triggering by the conveyor 230 permits image acquisition of the eight octants of the sample. Each of the eight cameras 110, 120, 130, 140, 150, 160, 170, 180 are operatively coupled to at least one of the four client computers 205, 210, 215, 220. The client computers 205, 210, 215, 220 control the operation of the eight cameras 110, 120, 130, 140, 150, 160, 170, 180. Thus, the client computers control image acquisition by each of the cameras. Additionally, the coupling of the cameras to the client computers permits transfer of acquired images from the cameras to the client computers. In an example embodiment, each of the four client computers ~~206~~ 205, 210, 215, 220 is configured to receive the acquired images from two of the eight cameras 110, 120, 130, 140, 150, 160, 170, 180 as shown in FIG. 2.

Please amend the paragraph starting on page 12, line 5 as follows:

Upon storing (640) the first result, the system determines (650) whether or not the contrast for all of the pixels in the ROI have been calculated. If it is determined (650) that all of the pixels in the ROI have been analyzed, then the process continues to the evaluating step (480) of FIG. 4. If, on the other hand, it is determined (650) that all of the pixels in the ROI have not been analyzed, then another pixel in the ROI is selected (660). Similar to the first pixel, the subsequent pixel of the reference image and the sample image each has a register address indicative of the pixel position and a register value indicative of the pixel value at that register address. Once the next pixel has been selected (660), the process of subtracting (620), normalizing, and storing (640) is repeated until all pixels in the ROI have been evaluated. A contrast image for the ROI is generated upon completion of the process outlined in FIG. 6.

Please amend the paragraph starting on page 14, line 11 as follows:

Once the area of irregular pixels is determined (720), the system determines whether or not the area of irregular pixels is greater than a predefined threshold area. For example, in grapefruits, if a large percentage of the overall area of the grapefruit displays a dark scar, then the grapefruit may be discarded as being defective. In this regard, not only is the qualitative contrast difference (e.g., red-color contrast, green-color contrast, blue-color contrast, etc.) indicative of whether a sample is defective, but the quantitative result (e.g., the defective area) provides an indication on whether or not the overall sample is defective. In order to reduce computational burdens, the predefined acceptability criteria, both qualitative and quantitative, may be stored in memory as lookup tables. Hence, during processing, these lookup tables may be rapidly accessed to efficiently determine whether or not certain pixels or certain samples are within the margins of acceptability.

Please amend the paragraph starting on page 16, line 7 as follows:

As shown in FIG. 9, several embodiments employ a single computer 905 to acquire and process data, rather than a computer network as shown in FIG. 2. The single computer 905 has an architecture that is similar to the architecture of the client computer ~~200~~ 210 of FIG. 2. In this regard, the computer 905 comprises a processor 910, memory 930, a network interface 950, and a hardware interface 960, which are all interconnected through a local bus 920. The hardware interface 960 is adapted to interface external components, such as a display device 970 and a camera 915, to the bus 920. The network interface 950 is adapted to interface the computer 905 to a network. The embodiment of FIG. 9 shows the memory 930 being configured with image acquisition logic 932, ROI generation logic 934, contrast image generation logic 936, lookup tables 938, and image evaluation logic 940. In several embodiments, these logic components 932, 934, 936, 938, 940 may be specific computer codes that instruct the processor 910 to carry out functions such as image acquisition, ROI generation, contrast image generation, image evaluation, etc. As is known in the art, the memory 930 may be either volatile memory or non-volatile memory or a combination of both. While certain imaging applications are specifically shown with reference to FIG. 9, it should be appreciated that the computer 905 may be adapted for additional functions, such as the execution of other software (not shown).